

User Manual

CAT5/6/7 Repeater for

AT-HD-V40SRS, AT-HD14SS, AT-HD19SS, AT-HD50SS, AT-HD50RSL, AT-DVI40SRS

AT-HDRP



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INTRODUCTION

Atlona Technologies AT-HDRP CAT5/6/7 Repeater receives the video/audio signal from HDMI™ CAT5/6 Senders such as then equalize and re-synchronize the HDMI™ signals, and de-emphasize the output HDMI signal to gain more transmission distance up to 60m (200ft) in HDTV 1080i format, 40m (130ft) in HDTV 1080p format, and 20m (65ft) in HDTV 1080p with 36-bit color depth. With only one cost effective CAT5/6 cable, users can readily extend HDTV sources from DVD players, Blu-ray Disc player, PS3, PC, and any other kinds of sources compliant with TMDS to distant display monitors including HDMI™ or DVI enabled TV sets or LCD PC monitors. The AT-HDRP can be cascaded in multiple sets to let you extend the HDMI™ or DVI signals well over 100m.

With an 8-level equalization rotary control on the unit, users can adjust the equalization strength to the received HDMI™ or DVI signals accordingly, and therefore optimize and re-transmit the HDMI™ or DVI signals between source and destination. The AT-HDRP supports extra high bandwidth up to 6.75Gbps, and with this capacity, the distortion resulting from HDMI™ repeater can be minimized for higher bandwidth video transmission such as full HD 1080p.

FEATURES

- HDCP compliant
 - Video bandwidth up to 10.2Gbps
 - Additionally extends the transmission length up to 60m (200ft) from the HDMI sources at HD resolution (1080i or 720p at 24-bit color depth)
 - Additionally extends the transmission length up to 30m (105ft) from the HDMI sources at Full HD resolution (1080p at 24-bit color depth)
 - Additionally extends the transmission length up to 20m (65ft) from the HDMI sources at Full HD resolution (1080p at 36-bit color depth)
 - Minimizes the cable skew by adjustable 8-level equalization rotary control
 - Re-synchronizes the signal
 - Pure unaltered uncompressed 7.1ch digital HDMI / DVI over CAT5/6 cable transmission
 - Allows cascading
 - Wall mounting housing design for easy and robust installation
- The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance.

PACKAGE CONTENTS

- 1x AT-HDRP unit
- 1x 5V DC locking power supply unit (110/240v universal)
- 1x User's manual

SPECIFICATIONS

Model Name		AT-HDRP
Technical		
Role of usage		Repeater
HDMI™ compliance		Yes
DVI compliance		DVI 1.1
HDCP compliance		Yes
Video bandwidth		Single-link 340MHz (10.2Gbps)
Video support		480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color
Audio support		Surround sound (up to 7.1ch) or stereo digital audio
Signal equalization		8-level digital control
Input TMDS signal		1.2 Volts (peak-to-peak)
Input DDC signal		5 Volts (peak-to-peak, TTL)
ESD protection		[1] Human body – ±19kV (air-gap discharge) & ±12kV (contact discharge) [2] Core chipset – ±8kV
PCB stack-up		4-layer board (impedance control – differential 100Ω; single 50Ω)
Input		1x RJ45
Output		1x RJ45
RJ45 connector		WE/SS 8P8C with 2 LED indicators
Rotary control switch		Signal level
Mechanical		
Housing		Metal enclosure
Dimensions [L x W x H]	Model	65 x 39 x 26mm (2.6" x 1.5" x 1")
	Package	175 x 270 x 80mm (6.9" x 10.6" x 3.1")
Weight	Model	100g (3.5 oz)
	Package	420g (15 oz)
Fixedness		Wall-mounting housing and latch-locking power jack
Power supply		5V DC
Power consumption		1 Watt (max)
Operation temperature		0~40°C (32~104°F)
Storage temperature		-20~60°C (-4~140°F)
Relative humidity		20~90% RH (no condensation)

PANEL DESCRIPTION

Input Panel



1. **CAT5/6/7 INPUT:** Connect to the RJ45 port on the Sender unit such as AT-HD-V40SS, ATHD14SS, AT-HD19SS, AT-HD50SS, AT-HD50RSL, AT-DVI40SRS with a solid Cat5/5e/6/7 UTP/STP cable
2. **+5V DC:** Connect to 5V DC power supply unit.

Output Panel

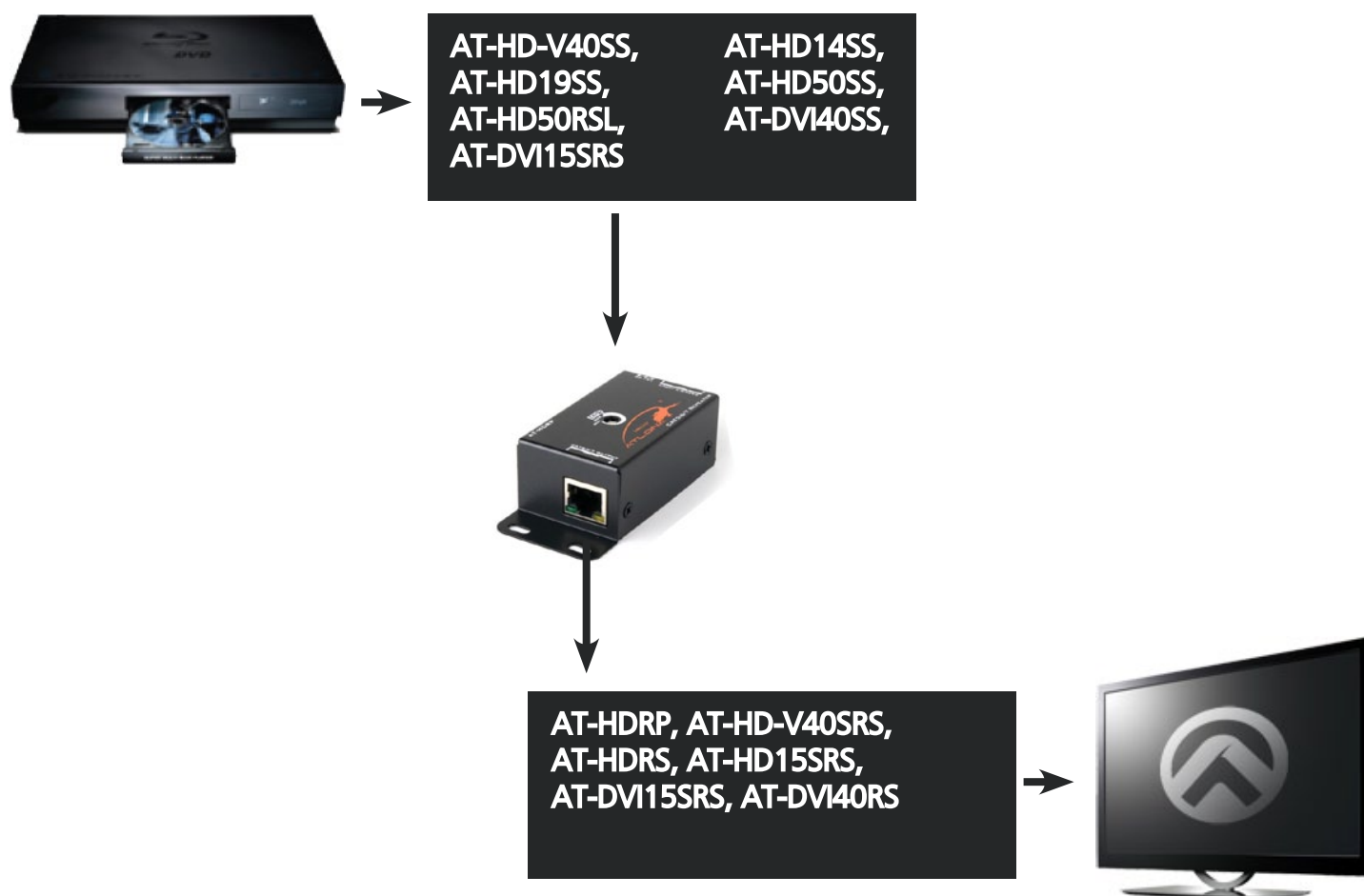


1. **CAT5/6/7 OUTPUT:** Connect to the RJ45 port on the Receiver unit such as AT-HDRP, AT-HD-V40RS, AT-HDRS, AT-HD15SRS, AT-DVI15SRS, and AT-DVI40RS with a solid Cat5/5e/6/7 UTP/STP cable
2. **EQ:** Dial the 8-level signal equalization control to the received HDMI signals. The HDMI signal level varies from MAX (strongest) to MIN (weakest) for respective transmission length from longest possible range to short distance. Always dial the EQ from MIN to MAX and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate EQ setting may cause overpowering issues that would shorten the product's life significantly!

INSTALLATION

1. Connect a HDMI™ or DVI Sender Unit such as AT-HD-V40SS, AT-HD14SS, AT-HD19SS, AT-HD50SS, AT-HD50RSL, AT-DVI40SRS with a solid Cat5/5e/6/7 UTP/STP cable to the CAT5/6/7 INPUT RJ45 port.
2. Connect a HDMI™ or DVI Receiver Unit such as AT-HDRP, AT-HD-V40RS, AT-HDRS, AT-HD15SRS, AT-DVI15SRS, and AT-DVI40RS with a solid Cat5/5e/6/7 UTP/STP cable to the CAT5/6/7 OUTPUT RJ45 port.
3. Make sure the solid Cat5/5e/6/7 UTP/STP cables are tightly connected and not loose.
4. Plug in the 5V DC power supply unit to the locking power jack.
5. If you see flickering or blinking image on the display, adjust the rotary control switch to improve the cable skew. MAX stands for the strongest HDMI™ signal level for longest possible transmission length while MIN stands for the weakest HDMI signal level for short transmission length. Try adjusting the signal level from MIN to MAX to find the optimal setting.

CONNECTION DIAGRAM



NOTICE

1. When adjusting the signal level on the receiver unit, please dial the rotary control switch from MIN to MAX and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
2. If the DVI or HDMI™ device requires the EDID information, please use AT-DVISync EDID Reader/Writer to retrieve and provide DVI or HDMI™ display EDID information.
3. All HDMI™ over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
4. The transmission length is largely affected by the type of Cat-5/5e/6 cables, the type of HDMI™ sources, and the type of HDMI™ display. The testing result shows solid UTP cables (usually in the form of 300m [1,000ft] bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
5. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended.
6. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use double shielded STP cables to improve EMI problems, which is worsen in long transmission.
7. Because the quality of the category cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
8. If your HDMI™ display has multiple HDMI™ inputs, it is found that the first HDMI™ input [HDMI™ input 1] generally can produce better transmission performance among all HDMI™ inputs.

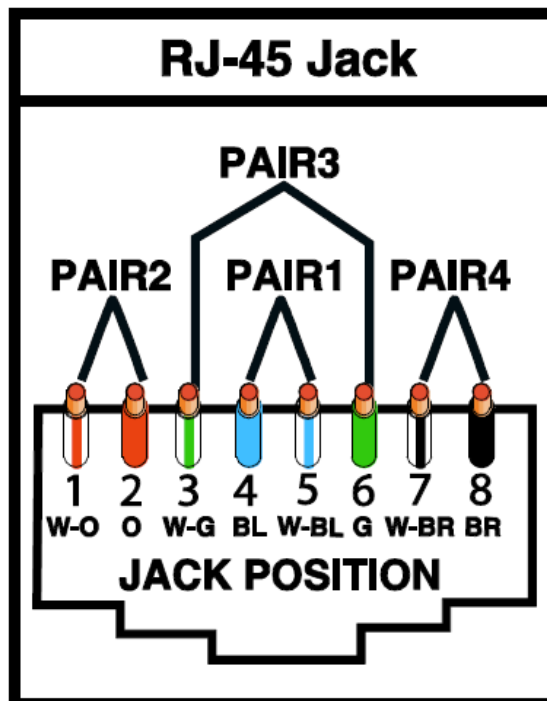
PERFORMANCE GUIDE

Performance rating		Type of category cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★★★	★★★★★	★★★★★★
	Shielded (STP)	★★★	★★★★	★★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		



RJ45 / CAT5 REFERENCE

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	 W-O	TX0-
2	 O	TX0+
3	 W-G	TX1-
4	 BL	TX1+
5	 W-BL	TX2-
6	 G	TX2+
7	 W-BR	TXC-
8	 BR	TXC+



SAFETY INFORMATION

Safeguards



To reduce the risk of electric shock, do not expose this product to rain or moisture



Do not modify the wall plug. Doing so will void the warranty and safety features.



If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.



This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.

Precautions

FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

Operate this product using only the included external power supply. Use of other power supplies could impair performance, damage the product, or cause fires.

In the event of an electrostatic discharge this device may automatically turn off. If this occurs, unplug the device and plug it back in.

Protect and route power cords so they will not be stepped on or pinched by anything placed on or against them. Be especially careful of plug-ins or cord exit points from this product.

Avoid excessive humidity, sudden temperature changes or temperature extremes.

Keep this product away from wet locations such as bathtubs, sinks, laundries, wet basements, fish tanks, and swimming pools.

Use only accessories recommended by Atlona to avoid fire, shock, or other hazards.

Unplug the product before cleaning. Use a damp cloth for cleaning and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

Never open, remove unit panels, or make any adjustments not described in this manual. Attempting to do so could expose you to dangerous electrical shock or other hazards. It may also cause damage to your AT-HDRP. Opening the product will void the warranty.

Do not attempt to service the unit. Disconnect the product and contact your authorized Atlona reseller or contact Atlona directly.

WARRANTY

Limited Warranty

Atlona Technologies warrants that (a) its products (the AT-HDRP) will perform substantially in accordance with the accompanying written materials for a period of 3 years from the date of receipt and (b) that the product will be free from defects in materials and workmanship under normal use and service for a period of 3 years. In the event applicable law imposes any implied warranties, the implied warranty period is limited to 3 years from the date of receipt. Some jurisdictions do not allow such limitations on duration of an implied warranty, so the above limitation may not apply to customers that fall within those areas.

Customer Remedies

Atlona Technologies' and its suppliers' entire liability and Customer's exclusive remedy shall be, at Atlona Technologies' decision, either return of the price paid for the product, repair, or replacement of the product that does not meet this Limited Warranty and which is returned to Atlona Technologies with a copy of the Customer's receipt. This Limited Warranty is void if failure of the product has resulted from accident, abuse, misapplication, or natural occurrence. In example but not limited to: power surges (electrical storms, local power outage), dropping the product (or items on the product), contact with fluids, and physical misconduct (i.e. kicking or punching). Any replacement product will be warranted for the remainder of the original warranty period.

No other warranties

To the maximum extent permitted by applicable law, Atlona Technologies and its suppliers disclaim all other warranties, either expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with regard to the product and any related written materials. This Limited Warranty gives customer specific legal rights. Customers may have other rights depending on the jurisdiction.

No liability for damages

To the maximum extent permitted by applicable law, in no event shall Atlona Technologies or its suppliers be liable for any damages arising out of the use of or inability to use this product, even if Atlona Technologies has been advised of the possibility of such damages. Such damages include but are not limited to: special, incidental, consequential, or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss. Atlona Technologies' and its suppliers' entire liability under any provision of this agreement shall be limited to the amount actually paid by you for the product. Some Jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damage. The above limitations may not apply to you in such jurisdictional cases.

ATLONA PRODUCT REGISTRATION

Thank you for purchasing this Atlona product. - We hope you enjoy it and will take an extra few moments to register your new purchase.

Registration creates an ownership record if your product is lost or stolen and helps ensure you'll receive notification of performance issues and firmware updates.

At Atlona, we respect and protect your privacy, assuring you that your registration information is completely secure. Atlona product registration is completely voluntary and failure to register will not diminish your limited warranty rights.

To register go to: <http://www.atlona.com/registration>